

AMENDMENTS TO THE CLAIMS

CLAIM 1 (CURRENTLY AMENDED): A seal assembly dimensioned to fit within an adapter member for a bicycle bottom bracket containing an axle, wherein the seal assembly comprises:

a support that includes a laterally inwardly facing surface, a laterally outwardly facing surface, a radially inner portion and a radially outer portion, wherein the laterally inwardly facing surface faces laterally inwardly relative to the bicycle when the seal assembly is mounted to the bicycle;

an outer seal extending circumferentially around a radially outer surface of the support to prevent contaminants from entering past the outer seal into the adapter member;

an inner seal extending circumferentially around a radially inner surface of the support to prevent contaminants from entering past the inner seal into the adapter member;

wherein the outer seal and the inner seal are disposed on opposite lateral sides of the support;  
and

wherein the support is dimensioned so that a space is formed between the radially outer portion of the support and an inner peripheral surface of the adapter member when the seal assembly is mounted to the bicycle so that the radially outer portion of the support faces the inner peripheral surface of the adapter member across the space.

CLAIM 2 (ORIGINAL): The seal assembly according to claim 1 wherein the outer seal extends around an outer peripheral surface of the support.

CLAIM 3 (ORIGINAL): The seal assembly according to claim 1 wherein the inner seal extends around an inner peripheral surface of the support.

CLAIM 4 (ORIGINAL): The seal assembly according to claim 1 wherein the outer seal extends around an outer peripheral surface of the support, and wherein the inner seal extends around an inner peripheral surface of the support.

CLAIM 5 (ORIGINAL): The seal assembly according to claim 4 wherein the support comprises a tubular member.

CLAIM 6 (ORIGINAL): The seal assembly according to claim 1 wherein the support comprises an annular base member.

CLAIM 7 (ORIGINAL): The seal assembly according to claim 6 wherein the inner seal is disposed at a radially inner edge of the base member.

CLAIM 8 (ORIGINAL): The seal assembly according to claim 6 wherein the support further comprises an inner ledge extending from a radially inner side of the base member.

CLAIM 9 (ORIGINAL): The seal assembly according to claim 8 wherein the inner ledge comprises an inner tubular member.

CLAIM 10 (PREVIOUSLY PRESENTED): A seal assembly dimensioned to fit within an adapter member for a bicycle bottom bracket containing an axle, wherein the seal assembly comprises:

a support that includes a laterally inwardly facing surface, a laterally outwardly facing surface, a radially inner portion and a radially outer portion, wherein the laterally inwardly facing surface faces laterally inwardly relative to the bicycle when the seal assembly is mounted to the bicycle;

wherein the support comprises an annular base member with an inner tubular member forming an inner ledge extending from a radially inner side of the base member;

an outer seal extending circumferentially around a radially outer surface of the support;

an inner seal extending circumferentially around a radially inner surface of the support;

wherein the outer seal and the inner seal are disposed on opposite lateral sides of the support;

and

wherein the inner tubular member includes a radially outwardly extending protuberance spaced apart from the base member.

CLAIM 11 (ORIGINAL): The seal assembly according to claim 9 wherein the inner tubular member extends from a radially inner edge of the base member.

CLAIM 12 (PREVIOUSLY PRESENTED): The seal assembly according to claim 11 wherein the inner seal is disposed at a radially inner edge of the base member opposite the inner tubular member.

CLAIM 13 (ORIGINAL): The seal assembly according to claim 6 wherein the support further comprises an outer ledge extending from a radially outer side of the base member.

CLAIM 14 (PREVIOUSLY PRESENTED): A seal assembly dimensioned to fit within an adapter member for a bicycle bottom bracket containing an axle, wherein the seal assembly comprises:

a support that includes a laterally inwardly facing surface, a laterally outwardly facing surface, a radially inner portion and a radially outer portion, wherein the laterally inwardly facing surface faces laterally inwardly relative to the bicycle when the seal assembly is mounted to the bicycle;

wherein the support comprises an annular base member with an outer ledge extending from a radially outer side thereof;

an outer seal extending circumferentially around a radially outer surface of the support;

an inner seal extending circumferentially around a radially inner surface of the support;

wherein the outer seal and the inner seal are disposed on opposite lateral sides of the support;

and

wherein the outer ledge comprises an outer tubular member.

CLAIM 15 (ORIGINAL): The seal assembly according to claim 14 wherein the outer seal is disposed around an outer peripheral surface of the outer tubular member.

CLAIM 16 (ORIGINAL): The seal assembly according to claim 6 wherein the support further comprises:

an inner ledge extending from a radially inner side of the base member; and

an outer ledge extending from a radially outer side of the base member.

CLAIM 17 (PREVIOUSLY PRESENTED): A seal assembly dimensioned to fit within an adapter member for a bicycle bottom bracket containing an axle, wherein the seal assembly comprises:

a support that includes a laterally inwardly facing surface, a laterally outwardly facing surface, a radially inner portion and a radially outer portion, wherein the laterally inwardly facing surface faces laterally inwardly relative to the bicycle when the seal assembly is mounted to the bicycle;

wherein the support comprises an annular base member with an inner ledge extending from a radially inner side thereof and an outer ledge extending from a radially outer side thereof;

an outer seal extending circumferentially around a radially outer surface of the support;

an inner seal extending circumferentially around a radially inner surface of the support;

wherein the outer seal and the inner seal are disposed on opposite lateral sides of the support;

and

wherein the inner ledge comprises an inner tubular member, and wherein the outer ledge comprises an outer tubular member.

CLAIM 18 (ORIGINAL): The seal assembly according to claim 17 wherein the inner tubular member includes a radially outwardly extending protuberance spaced apart from the base member.

CLAIM 19 (ORIGINAL): The seal assembly according to claim 17 wherein the inner tubular member extends from a radially inner edge of the base member.

CLAIM 20 (ORIGINAL): The seal assembly according to claim 19 wherein the inner seal is disposed at a radially inner edge of the base member opposite the inner tubular member, and wherein the outer seal is disposed around an outer peripheral surface of the outer tubular member.

CLAIM 21 (ORIGINAL): The seal assembly according to claim 20 wherein the inner tubular member and the outer tubular member extend from a same side of the base member.

CLAIM 22 (CURRENTLY AMENDED): An adapter assembly for a bicycle bottom bracket comprising:

a tubular adapter member having an inner peripheral surface;

a seal assembly comprising:

an annular base member;

an outer seal extending circumferentially around a radially outer surface of the base member and contacting the adapter member to prevent contaminants from entering past the outer seal into the adapter member; and

an inner seal extending circumferentially around a radially inner surface of the base member to prevent contaminants from entering past the inner seal into the adapter member; and

wherein the seal assembly is dimensioned so that a space is formed between the radially outer surface of the base member and an inner peripheral surface of the adapter member when the seal assembly is mounted to the bicycle so that the radially outer surface of the base member faces the inner peripheral surface of the adapter member across the space.

CLAIM 23 (PREVIOUSLY PRESENTED): An adapter assembly for a bicycle bottom bracket comprising:

a tubular adapter member having an inner peripheral surface;

a seal assembly comprising:

an annular base member;

an outer seal extending circumferentially around a radially outer surface of the base member and contacting the adapter member;

an inner seal extending circumferentially around a radially inner surface of the base member;

an inner ledge extending from a radially inner side of the base member; and

an outer ledge extending from a radially outer side of the base member;

wherein the outer seal is disposed between the outer ledge and the inner peripheral surface of the adapter member.

CLAIM 24 (ORIGINAL): The adapter assembly according to claim 23 wherein the inner seal is disposed at a radially inner edge of the base member.

CLAIM 25 (ORIGINAL): The adapter assembly according to claim 24 wherein the inner ledge includes a radially outwardly extending protuberance spaced apart from the base member.

CLAIM 26 (ORIGINAL): The adapter assembly according to claim 24 further comprising a bushing disposed at the inner peripheral surface of the adapter member and facing the inner ledge.

CLAIM 27 (ORIGINAL): The adapter assembly according to claim 26 wherein the bushing includes a radially inwardly extending bushing protuberance.

CLAIM 28 (ORIGINAL): The adapter assembly according to claim 27 wherein the bushing protuberance is disposed at a central portion of the bushing.

CLAIM 29 (ORIGINAL): The adapter assembly according to claim 24 wherein the inner ledge and the outer ledge extend from a same side of the base member.

CLAIM 30 (ORIGINAL): The adapter assembly according to claim 29 wherein the inner ledge comprises an inner tubular member, and wherein the outer ledge comprises an outer tubular member.

CLAIM 31 (ORIGINAL): The adapter assembly according to claim 30 further comprising an annular bushing disposed at the inner peripheral surface of the adapter member and facing the inner tubular member.

CLAIM 32 (ORIGINAL): The adapter assembly according to claim 31 further comprising a bearing disposed between the bushing and the inner tubular member.

CLAIM 33 (ORIGINAL): The adapter assembly according to claim 32 wherein the bearing comprises:

an inner bearing race;  
an outer bearing race; and  
a plurality of ball bearings disposed between the inner bearing race and the outer bearing race.

CLAIM 34 (ORIGINAL): The adapter assembly according to claim 33 wherein the bushing includes a radially inwardly extending bushing protuberance.

CLAIM 35 (ORIGINAL): The adapter assembly according to claim 34 wherein the bushing protuberance is disposed at a central portion of the bushing.

CLAIM 36 (ORIGINAL): The adapter assembly according to claim 33 wherein the bushing and the inner tubular member both are formed of a nonmetallic material.

CLAIM 37 (NEW) The seal assembly according to claim 1 wherein the outer seal prevents contaminants from entering past a radially outer peripheral surface of the outer seal into the adapter member.

CLAIM 38 (NEW) The seal assembly according to claim 1 wherein the inner seal prevents contaminants from entering past a radially inner peripheral surface of the inner seal into the adapter member.

CLAIM 39 (NEW) The adapter assembly according to claim 22 wherein the outer seal prevents contaminants from entering past a radially outer peripheral surface of the outer seal into the adapter member.

CLAIM 40 (NEW) The adapter assembly according to claim 22 wherein the inner seal prevents contaminants from entering past a radially inner peripheral surface of the inner seal into the adapter member.